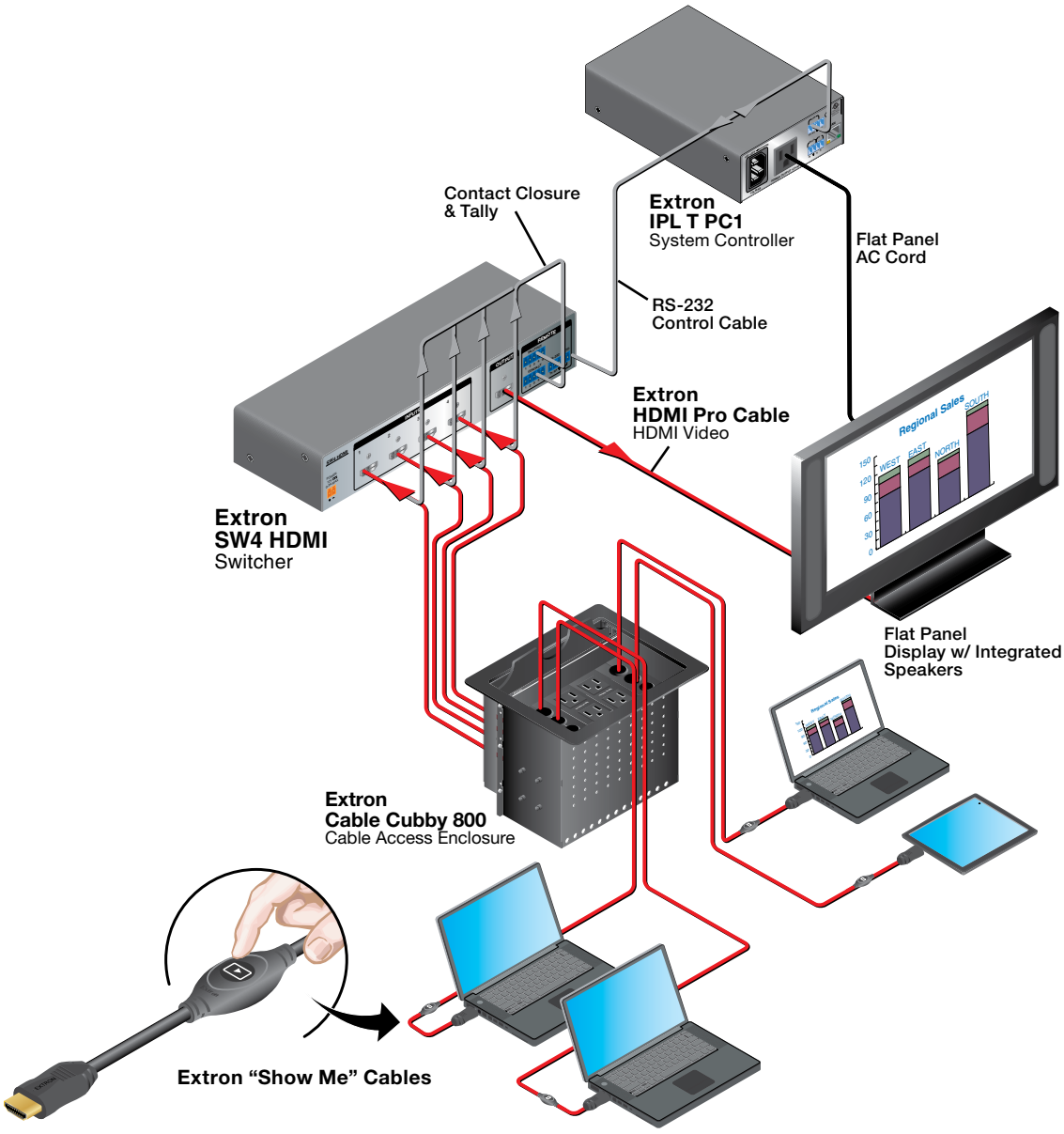
TeamWork 400 and TeamWork 600 Kits • Installation Guide

The TeamWork 400 and TeamWork 600 kits consist of an HDMI switcher, system controller, Cable Cubby®, and cables packaged together as a complete system that, in most cases, requires no configuration.



The diagram above shows a typical TeamWork 400 application. The input devices (laptops and a tablet) connect to the switcher, using Show Me cables. The Show Me cables allow the user to select the active input on the switcher.

A control cable connects the RS-232 ports on the switcher and the system controller.

The system controller powers the display on and off. The system controller has been configured so that when a video signal is detected on any of the switcher inputs, the display is powered on. A 30 second timer is started when no signal is detected on any of the switcher inputs. If an active source is detected before the timer expires, the display remains on and the timer is reset. If 30 seconds pass without an active signal, the system controller powers off the display.

The TeamWork kits work, as described, without further software configuration. If you need to change the behavior or operation of the system, you must configure the system controller (see the *IPL T PC1/IPL T PC1i User Guide*).

Features

- Standard systems support groups of up to four (TeamWork 400) or six (TeamWork 600) users.
- Standard systems contain a complete turnkey package that includes cables, switcher, system controller, and Cable Cubby enclosure.
- System controller pre-loaded with Global Configurator that requires no further adjustment.
- Works with most commercially available flat panel displays, laptops and tablets.
- HDCP compliant
- Supports legacy analog sources with optional TeamWork VGA kit.
- Section 508 compliant.

Kit Components

When your kit is delivered, check that all the components are present.

	TeamWork 400	**TeamWork 400i**	**TeamWork 600**	**TeamWork 600i**
HDMI switcher	1 (SW4 HDMI, 4 input)	1 (SW4 HDMI, 4 input)	1 (SW6 HDMI, 6 input)	1 (SW6 HDMI, 6 input)
System controller	1 (IPL T PC1)	1 (IPL T PC1i)	1 (IPL T PC1)	1 (IPL T PC1i)
Cable Cubby 800	1	1	1	1
Power modules	2 US modules included (4 AC outlets total)	Sold separately (2 AC outlets total)	2 US modules included (4 AC outlets total)	Sold separately (2 AC outlets total)
HDMI Show Me cables	4	4	6	6
HDMI cable	1	1	1	1
Switcher control cable	1	1	1	1
Cable Cubby AAP brackets (three-space)	2 pairs	3 pairs	2 pairs	3 pairs
Blank AAP plates (single-space)	2	2	2	2
Installation Guide	*TeamWork 400, 400i, 600, and 600i Kits Installation Guide*			

Display Requirements

The TeamWork system is designed to work with most brands and models of flat panel displays available worldwide. For optimum performance, consider the following when selecting the displays for your TeamWork installation. The display should be tested thoroughly prior to installation or mass deployment of TeamWork systems.

Power attributes — The system works by controlling AC power to the display. When the display is in the ON state with an HDMI input selected, it must be able to power back ON to the same HDMI input when AC power is disconnected and reconnected. If the display doesn't behave this way, an alternate display should be used. Alternatively, you may need to control the display a different way (i.e. RS-232, infrared, or via Ethernet) using a different type of Extron control processor.

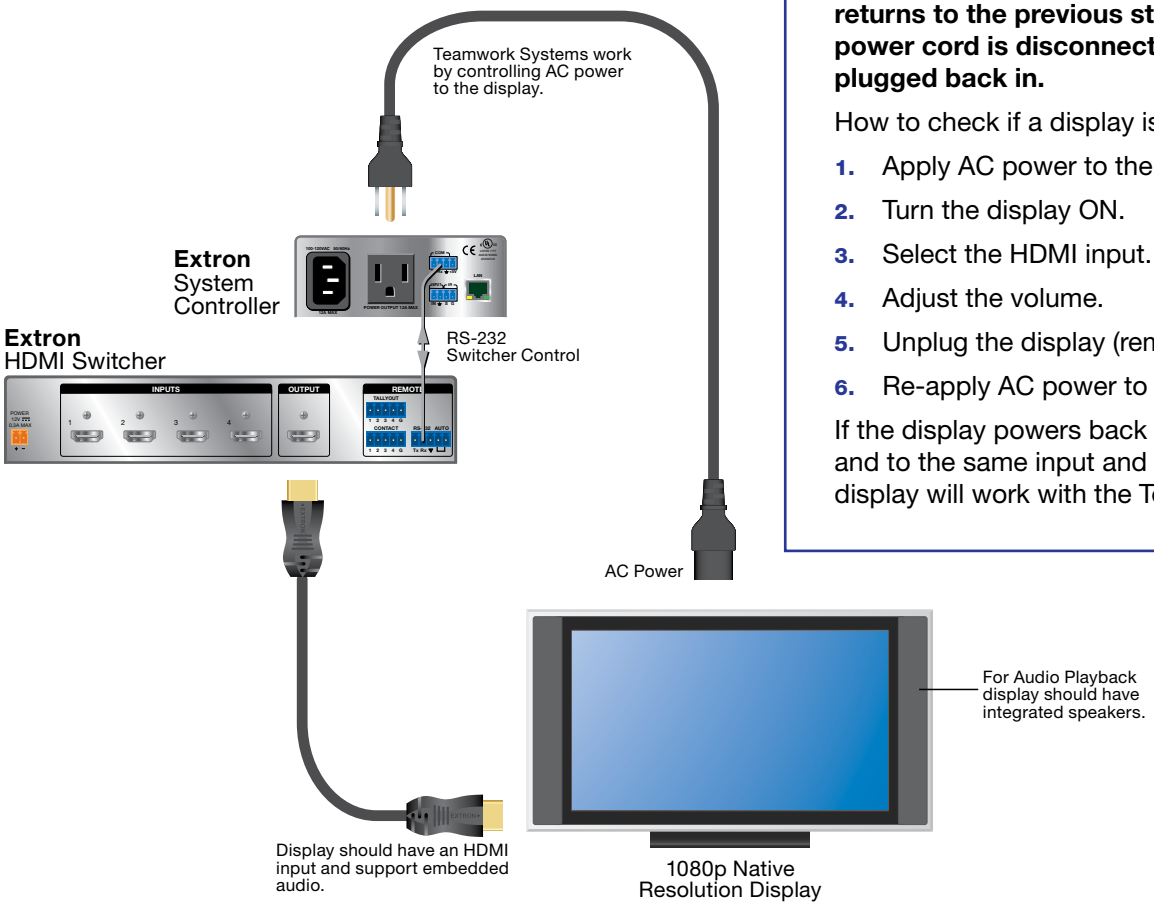
Sleep mode — if the display has a Sleep Mode feature (sometimes called 'auto sleep'), it must be disabled. Many displays have an option to disable this within the menu settings.

Resolution – The TeamWork systems were designed for use with flat panels having an HDMI input connector and having a native resolution of 1080p. Many of the readily available consumer and professional displays support 1080p natively.

Audio – Audio from source devices is supported in the TeamWork system by routing it as an embedded audio signal to the display for playback via integrated speakers. Most displays with HDMI inputs and integrated speakers work this way. Some professional or commercial grade displays do not have integrated speakers and will not support audio playback. Typically, source devices with HDMI output connectors embed audio onto the HDMI connector.

NOTES:

- Always check and test compatibility before installation. Some systems may require advanced configuration of the system controller and require the display to be controlled by RS-232, Ethernet, or Infrared.
- Some displays support a lockout of local buttons. Extron recommends that, after setup, user accessible controls are locked whenever possible. This ensures the display remains optimized for the TeamWork system.



TeamWork systems require a display that returns to the previous state when the power cord is disconnected and then plugged back in.

How to check if a display is compatible:

1. Apply AC power to the display.
2. Turn the display ON.
3. Select the HDMI input.
4. Adjust the volume.
5. Unplug the display (remove AC power).
6. Re-apply AC power to the display.

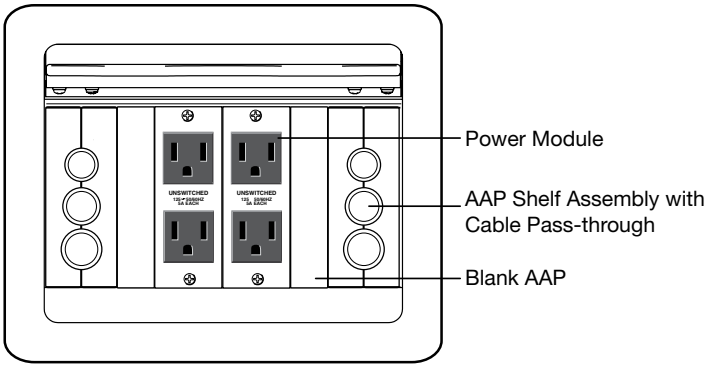
If the display powers back up (to the ON state) and to the same input and volume level, the display will work with the TeamWork system.

Installation

Install the Power Modules in the Cable Cubby

Detailed instructions are in the *Cable Cubby Setup Guide*.

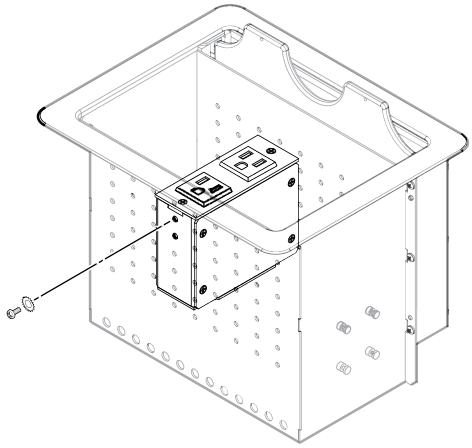
Extron recommends the layout shown to the right with AAP shelf assemblies on either side of the power modules.



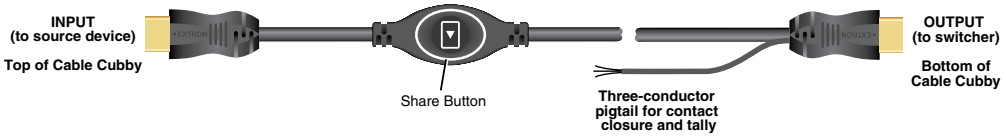
NOTE: Depending on your country, a power module may occupy two or three AAP spaces, so your final configuration may look slightly different.

Secure the power modules in position with the provided #4-40 Phillips head screws and star washers.

WARNING: Possible electric shock: To ensure good electric grounding, you must use the star washers with the screws.



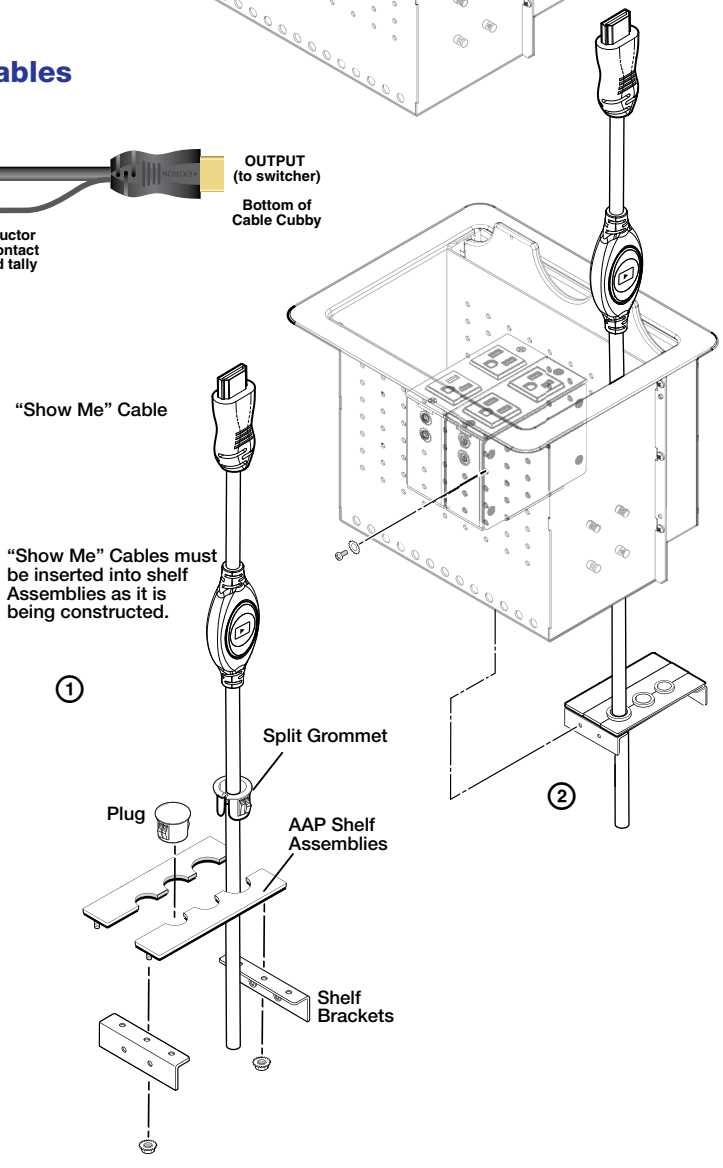
Install the AAP Shelf Assembly and Show Me Cables



ATTENTION:

- The end with the button and LED connects to the input devices and must come out of the top of the Cable Cubby.
- The end with the three-conductor pigtail connects to the switcher and must come out of the bottom of the Cable Cubby.

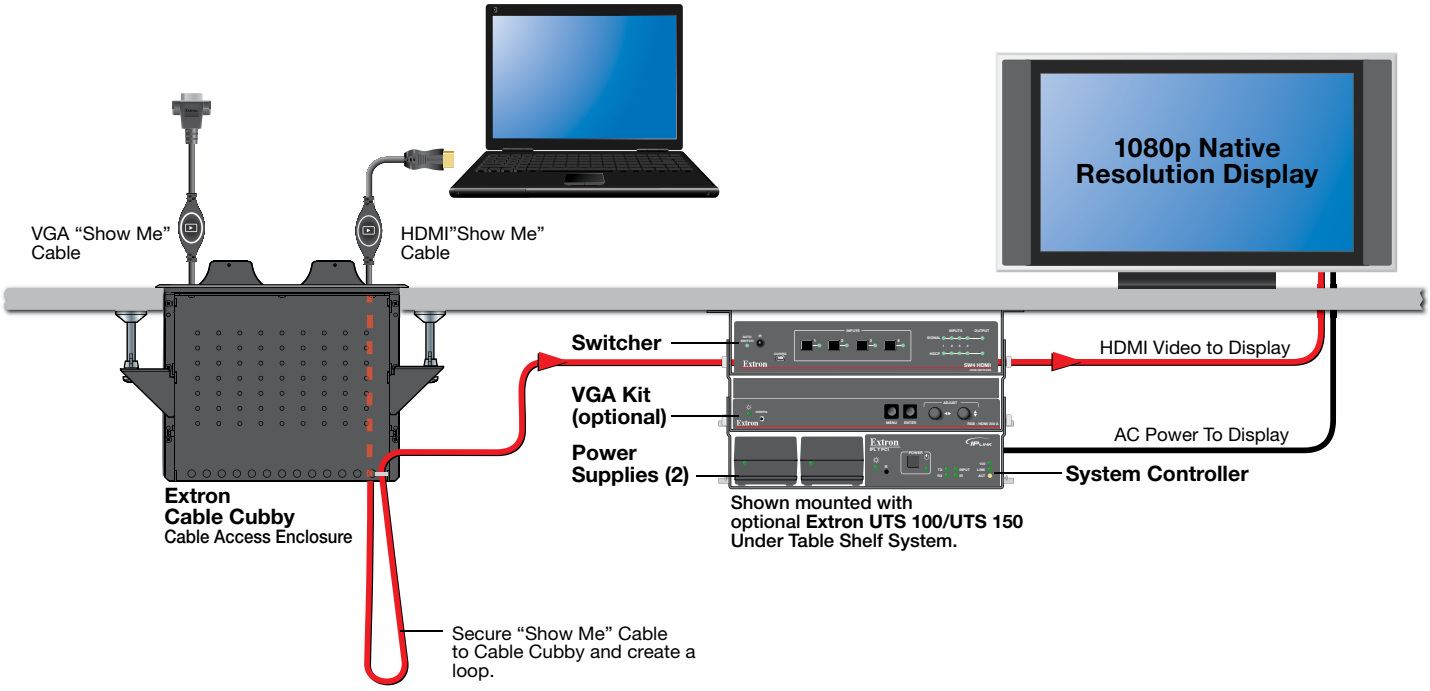
1. Assemble the AAP shelf assembly.
2. Insert the AAP assemblies into the Cable Cubby from underneath and secure them in position with the provided #4-40 Phillips head screws and star washers.



Mounting and Placement of System Components

Decide where you will install your TeamWork system and where the individual components will be placed.

- The Cable Cubby should provide easy access for as many users as possible. Ensure that there is ample space for cables under the table. Ensure that the edge on which the lid opens is correctly oriented.
- The system controller should be placed close to the display.
- The SW4 HDMI (or SW6 HDMI) switcher should be placed close to the Cable Cubby.



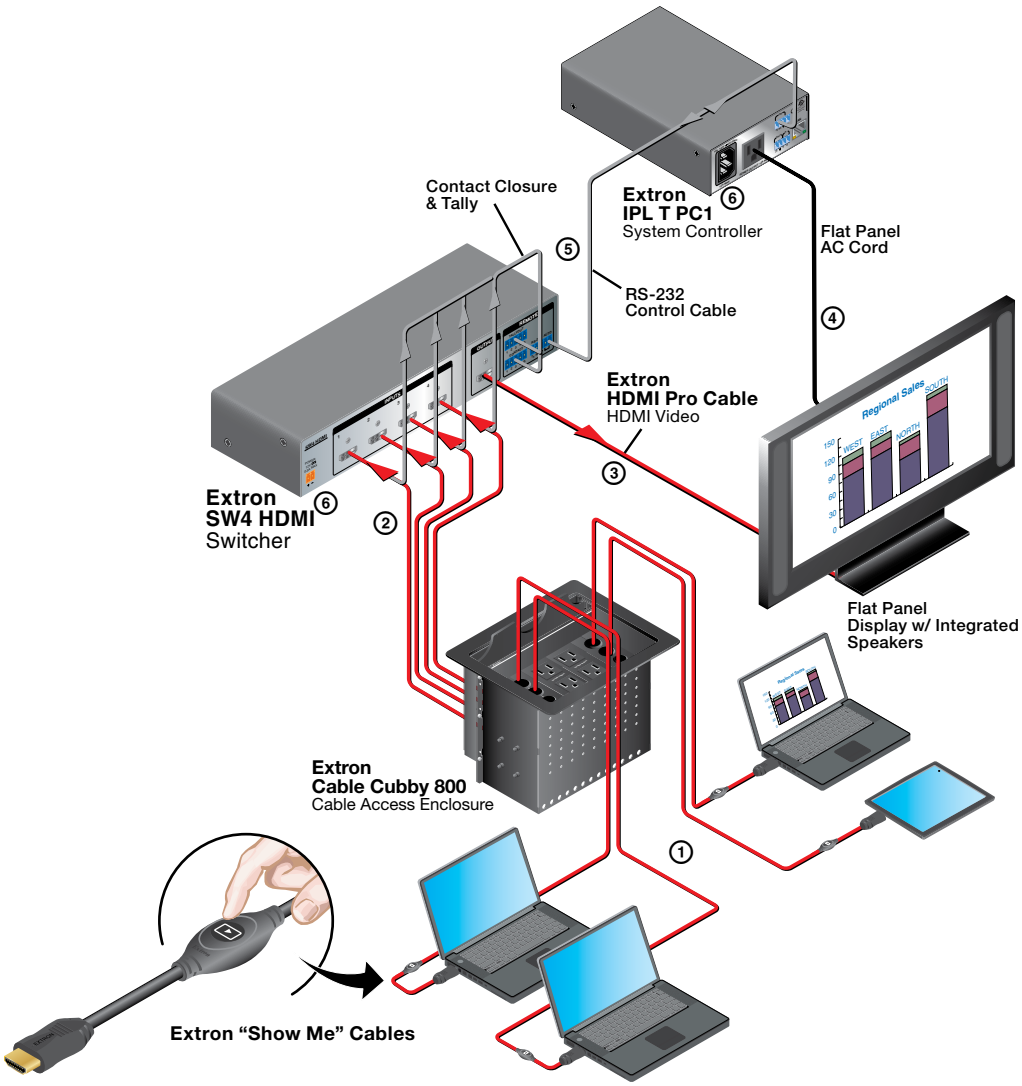
Installing the Cable Cubby in the Table

Before cutting the table and installing the Cable Cubby, see the *Cable Cubby Setup Guide* (see **www.extron.com**).

ATTENTION:

- Ensure that the orientation of the cable cubby and the hole dimensions are correct before cutting the table.
- After installation, secure the cables to avoid them becoming tangled (see the figure above).

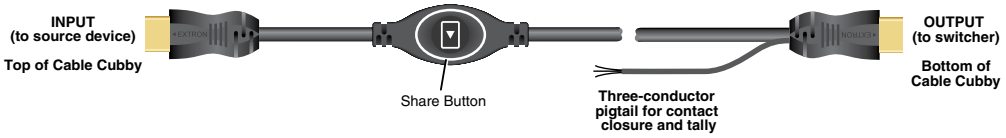
Cabling



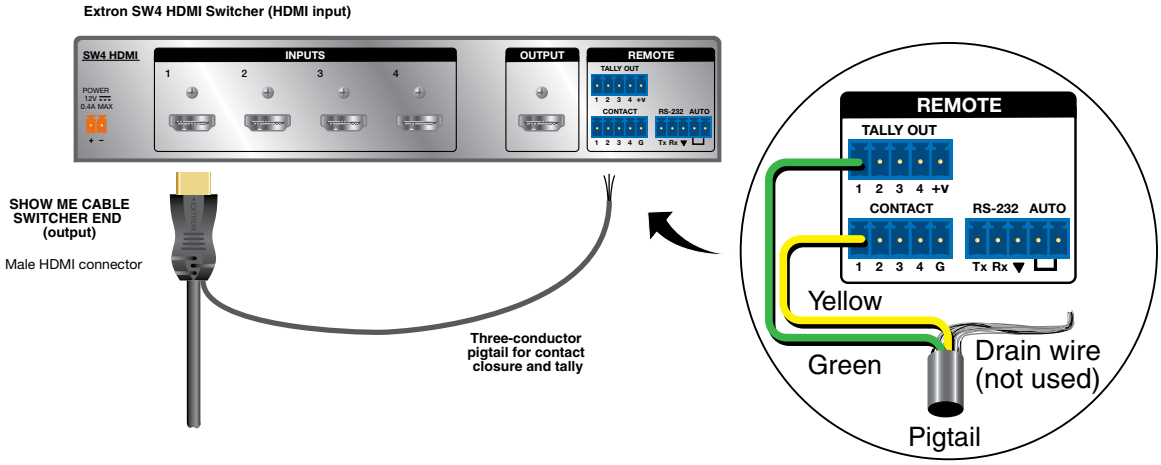
1. Connect the Show Me cables to the source devices.
2. Connect the Show Me cables to the switcher.
3. Connect the switcher to the display.
4. Connect the display to the system controller.
5. Connect the system controller to the switcher.
6. Connect power to the switcher and system controller.

Show Me Cables

The Extron “Show Me” cables are for use with Extron TeamWork systems. They feature a Share button for remote input source selection and a control pigtail, which may be wired directly into Extron switchers with contact closure and tally outputs.



1. Connect the input end of the Show Me cable to the source device.
2. Connect the HDMI output to the Extron switcher.



3. Connect the Green (Tally Out) and Yellow (Contact) pigtail wires as shown above. The number under the Tally Out and Contact pins must correspond to the video input on the switcher.

NOTES:

- The drain wire does not need to be wired to the switcher. The “Show Me” cables are grounded via the video connectors.
- Do not connect the “Show Me” cable to the +V pin on the Extron switcher.

Press the Share button to switch the connected source to the main presentation display.

Pressing the Share button creates a momentary contact closure, which triggers the switcher to select the connected source device. If a tally output is available, the button will light up blue.

NOTES:

- The source device provides the +5 VDC supply voltage needed to illuminate the Share button. If the source device does not supply this +5VDC, the Share button will not illuminate. Many mobile devices do not provide the required voltage to light up the button.
- Digital “Show Me” cables support embedded audio and CEC signals.

Connect the Switcher to the Display Device

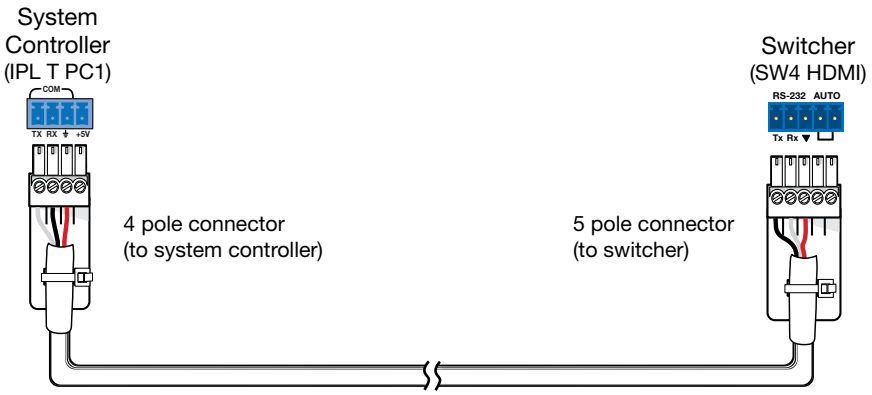
Connect the switcher HDMI output to the HDMI input of the display device, using the provided cable. Do not use HDMI to DVI adapters. If necessary, see the user guide for the display device.

Connect the Display to the System Controller

Connect the power cord from the display device to the power output receptacle of the system controller. TeamWork systems work by controlling the AC power to the display.

Connect the System Controller to the Switcher

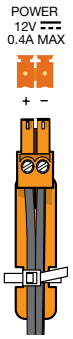
Connect the COM port of the system controller to the RS-232 port on the switcher with the provided control cable.



Switcher Control Cable

ATTENTION: The two ends of the RS-232 control cable are different. One has a 4 pole connector, the other has a 5 pole connector.

Connecting Power



The system controller uses an internal power supply. Connect the power cord to a wall outlet.

The TeamWork 600 systems use a 6 input switcher with an internal power supply. Connect the power cord to a wall outlet.

The TeamWork 400 systems use a 4 input switcher with a 12 VDC, 1 A power supply, which is provided with the switcher.

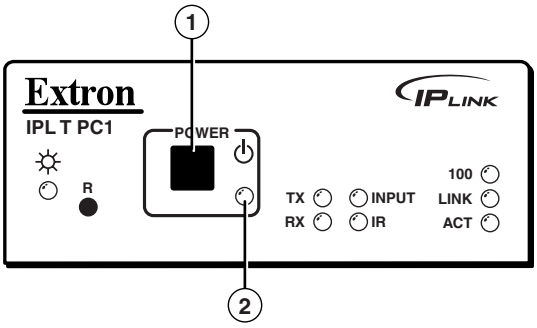
ATTENTION: Do not connect the power supply to the SW4 HDMI switcher until you have read the Attention notifications in the “Wiring the Power Supply” section of the *SW HDMI Series User Guide*.

The optional TeamWork VGA kit also includes a 12 VDC, 1 A power supply for the analog to digital converter.

Testing the System

The TeamWork system has been pre-configured so that, once all the connections have been made and the devices are all powered on, there should be no need of further configuration for the system to work. To ensure that the system has been set up correctly, follow these steps:

1. Power on the equipment
   - Source devices
   - Switcher (IPL T PC1)
   - System controller
2. Press the power button (①) on the front panel of the system controller. The LED (②) lights green when power is being supplied to the attached output device.
3. Turn on the display and confirm that the display is receiving power.
4. Go to the menu for the display and disable the Sleep Mode feature. If necessary, see the display user guide.
5. Press the power button on the power controller. The LED should go out and the display should be turned off.



6. Connect one of the Show Me cables to a video source, such as a laptop.
7. Press the Show Me button on that cable. If the source device is providing a video signal, the LED on the Show Me cable lights blue and the display automatically turns on.
8. Connect a second Show Me cable to a second video source.
9. Repeat step 7 to verify that the second source device is providing a video signal and it is the output signal from the switcher.

   When the button on the second Show Me cable is pressed, the LED lights blue and the LED on the first cable is switched off.
10. Disconnect all the Show Me cables from the source devices.

    After about 30 seconds without an input signal, the display should turn off.
11. Connect a Show Me cable to a source device and press the Show Me button on that cable.

    As soon as an active video signal is detected, the display should be turned on.

Troubleshooting

No image on the display:

Cause 1 — There is a problem with the source device:

Solution — Verify the source device is powered **on** and outputs an active signal.

Cause 2 — Cable connections are incorrect:

Solution — Verify the HDMI output cable from the switcher is connected to the current HDMI input of the display.

Cause 3 — Display is off:

Solution 1 — Verify the display is in the **on** state.

Solution 2 — The TeamWork system turns the display on and off by controlling the AC power. If the display has a Sleep Mode feature, this feature must be disabled to prevent the display from accidentally powering **off**.

Cause 4 — The display has a problem:

Solution — Verify that the display functions correctly.

Cause 5 — The display cannot show video at the incoming resolution:

Solution — The EDID settings on the switcher may need to be changed. Contact an Extron Support representative at **www.extron.com/company/contactus.aspx**.

Show Me button LEDs stay off when pressed:

Cause 1 — The cable is not plugged into a source device that is producing an active video output signal:

Solution — Verify that the source device is on and producing an active signal.

Cause 2 — Contact or Tally wiring is incorrect:

Solution — See **Show Me Cables** (page 7) to ensure the contact and tally pins are correctly wired.

Cause 3 — The switcher is not powered on:

Solution — Verify that the switcher is powered **on**.

Cause 4 — Problem with Show Me cable:

Solution — Try connecting the video source to a different cable. If the second cable works correctly, there may be a problem with the Show Me cable. Contact an Extron Support representative at **www.extron.com/company/contactus.aspx**.

Cause 5 — Problem with Switcher:

Solution — If none of the cables work correctly, there may be a problem with the switcher. Contact an Extron Support representative at **www.extron.com/company/contactus.aspx**.

Cause 6 — The source device does not output +5V:

Solution — This is a problem with the source device. HDMI specifications require pin 18 to carry a +5V output.

The display does not automatically turn ON:

Cause 1 — Incorrect wiring:

Solution — Verify that the RS-232 communication cable is connected properly between the IPLink controller and Extron switcher.

Cause 2 — There is no video signal present at Show Me cables:

Solution — Verify that an active signal is present at the input of any of the Show Me cables.

Cause 3 — IPLink configuration is missing or corrupted:

Solution — Contact an Extron Support representative at **www.extron.com/company/contactus.aspx**.

The display stays On and never turns Off:

Cause 1 — Video signal is present at Show Me cables:

Solution — Verify that no active signals are present at the inputs of any of the Show Me cables. The TeamWork system is designed to turn off the Display only when no video signals are present.

Extron Headquarters
+1.800.633.9876 (Inside USA/Canada Only)
Extron USA - West
+1.714.491.1500
+1.714.491.1517 FAX
Extron USA - East
+1.919.850.1000
+1.919.850.1001 FAX

Extron Europe
+800.3987.6673
(Inside Europe Only)
+31.33.453.4040
+31.33.453.4050 FAX

Extron Asia
+65.6383.4400
+65.6383.4664 FAX

Extron Japan
+81.3.3511.7655
+81.3.3511.7656 FAX

Extron China
+86.21.3760.1568
+86.21.3760.1566 FAX

Extron Middle East
+971.4.299.1800
+971.4.299.1880 FAX

Extron Korea
+82.2.3444.1571
+82.2.3444.1575 FAX

Extron India
1800.3070.3777
Inside India Only
+91.80.3055.3777
+91.80.3055.3737 FAX

© 2013 Extron Electronics All rights reserved. www.extron.com